Rural District of Chester-le-Street.

TWENTY-FIFTH

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Health and Sanitary Condition

OF THE DISTRICT

FOR THE YEAR 1919.

CHESTER-LE-STREET.

To the Chairman and Members of the Rural District Council.

Mr. Chairman, Lady and Gentlemen,

I herewith submit for your consideration my Annual Report on the Health and Sanitary condition of your district during the year 1919.

I am,
Your obedient Servant,

JOHN TAYLOR.

31st March, 1920.

POPULATION.

The population at the middle of the year under review I have estimated at 68,020, which is based on an enumeration made by the Sanitary Inspectors whilst making a general housing survey during the early autumn. Whilst it may not be absolutely correct, it may be taken as a very good estimate.

The excess of births over deaths is 941 as compared with 802 last year and 928 the previous year.

MARRIAGES.

The number of marriages registered during the year has been 770 as compared with 512 for last year. This gives a marriage rate of 22·64 per 1000 as compared with a rate of 15·0 per 1000 last year. The marriage rate for England and Wales for the year ended 30th September, 1919, is 18·22 per 1000.

BIRTHS.

The number of births registered during the year was 1845 as compared with 1891 last year and with 1757 during 1917.

There was a remarkable decline during the first 6 months of the year, the number of births being 744 only, or a birth rate of 21·7 per 1000 per annum, an absolutely lowest record, but during the second half of the year the births numbered 1102, being a rate of 32·3 per 1000 per annum.

For all that recovery, the birth-rate for the year is only 27·12 per 1000, which has been the lowest save once, viz: in 1917, when the rate was 26·14 per 1000. The birth-rate for the Administrative County is 23·35 per 1000, and that for England and Wales is 18·5 per 1000.

DEATHS.

The number of deaths registered as occurring within the District during the year has been 824 as compared with 1089 last year and with 755 during the previous year.

Whilst these are the number of deaths of persons dying within your District some of these are of persons who were not domiciled within the district. These numbered 14, and on the other hand some persons whose legal domicile was in your district were for different reasons resident outside your district and died there. To get the actual number of deaths which must be debited to your district, the former must be subtracted and the latter added to the original number, 824, which leaves a nett number of deaths of 904 as the number of persons who belong to the district and whose deaths are allocated to your district.

This gives a death-rate of 13·89 per 1000 as compared with a rate of 17·82 per 1000 last year, and with 12·38 for 1917.

The death-rate for the Administrstive County is 13·17 per 1000, and that for England and Wales is 13·9 per 1000.

It will be observed that your death-rate is practically the same as that of England and Wales but it is hardly fair to compare your district with England and Wales as a whole.

The density of the population differs, the housing differs, and the occupations differ.

One might discard the last, but the former two points bring your district into rather the group of smaller towns, the death-rate which is 12·7 per 1000 lower by 1·19 per 1000 than your death-rate.

I think your Council should not feel quite satisfied until your death-rate falls to a level with that of the smaller towns.

From another point of view your district is probably ahead of these smaller towns, inasmuch as their birth-rate is only 18·4 per 1000 against your rate of 27·12, as the infant deaths tend to largely increase the general death-rate, and one expects a somewhat greater number of infants dying where the birth-rate is high than where it is low.

INFANT DEATHS.

The meaning of Infant Deaths is that the deaths referred to are of children who die before reaching the end of their first year and is calculated not on the population living but on the number of births during the year commented on.

The number of Infant Deaths registered was 203 as compared with 238 last year, and with 185 during the previous year.

The infant death-rate is thus 110·0 per 1000 born as compared with 125·8 per 1000 born last year, and with 105·3 per 1000 born during 1917.

The infant death-rate for the Administrative County is 113 per 1000 born, and for England and Wales is 89. For the 96 great towns *i.e.*, towns whose population is over 50,000, the rate is 93 per 1000 born, and for the 148 smaller towns, *i.e.*, places with a population of from 20,000 to 50,000, the rate is 90 per 1000 born.

There is thus a considerable fall in this death-rate which, while very gratifying, should not be made too much of until one can say that the fall is due to something more lasting, and better than a few years whose climatic condition has been unfavourable to the propagation of filth diseases.

In hot dry years diarrhœa is rife and kills children by the dozen. Now the past half-dozen years have not been hot years, at least not hot for any lengthened period, probably very hot for two or three weeks, then cold. There have been some dry, some not dry, but none hot for any length of time, and consequently diarrhœa has been at its lowest ebb.

Whilst your Council has no control over climate, there are conditions unfavourable to infant life which your Council has control over, and no one but your Council.

These conditions are the abatement of overcrowding, the abolition of the single-room or even the two-roomed tenement, the cleanliness of the surroundings of the house, and it is here that the Sanitary Inspector, if he can visit frequently, does more good than in any other work he performs, but an Inspector cannot visit frequently if much of his time is passed in travelling roads where there are no houses.

At present such is the case, and the remedy for such is more Inspectors, so that having fewer miles to travel he can devote his time to his real work, viz:—house inspection. By that I do not mean the structure of house only, but the conditions of the yards, of the sanitary conveniences, state of the scavenging, the overcrowding, the cleanliness of the rooms, and the general well-being of the populace.

The care of the infant, its feeding, its clothing, and its cleanliness might come under female supervision, a supervision which in the studied wisdom of the Council some years ago they neglected, and handed over, by default, to another authority, who is now reaping the praise for the good work which it is doing, kudos which under more advanced ideas should have rightfully fallen to your Council.

BIRTHS AND DEATHS OF ILLEGITIMATE CHILDREN.

During the year 90 births of illegitimate children have been registered as compared with 103 births last year.

The illegitimate birth-rate is 1·32 per 1000 as compared with 1·53 per 1000 last year, and with 1·18 per 1000 during 1917.

The number of deaths of illegitimate children is 18 as compared with 12 last year.

The infant illegitimate death-rate is 200 per 1000 illegitimated births as compared with 116·5 per 1000 last year, and with 187·5 per 1000 the previous year.

The illegitimate child is always less likely to reach adult life than the legitimate. Such a child is often not wanted, often it is placed without the care of its mother and may not in many instances receive the ordinary care bestowed on the legitimate, often its intrauterine life is not passed under the best conditions for vigorous growth, and thus its chance of living to adult life is lessened from the moment of its conception onward.

Whilst the infant death-rate in the legitimate is 105·4 per 1000 born that of the illegitimate is 200 per 1000 born, which is nearly double.

One is hopeful that supervision under Child Welfare Schemes will do something to preserve the life of the illegitimate and so lessen the enormous mortality amongst this unfortunate class which this year amounts to one death in every five born. If the same care is bestowed, both antenatel and postnatel, on the illegitimate as on the legitimate child, there is no reason why the death-rate in the one should be less than in the other.

ZYMOTIC DEATHS.

For comparison, I will continue to deal with Zymotic deaths as deaths caused by the seven classic chief Zymotic diseases, viz:—Small-pox, Scarlet Fever, Enteric Fever, Diphtheria, Whooping Cough, Measles and Diarrhœa, which number 96, as compared with 144 last year, and with 118 the previous year.

This gives a death rate of 1·41 per 1000, as compared with 2·14 per 1000 last year, and with 1·75 per 1000 the previous year.

The zymotic death-rate for the County is 0·87 per 1000, and that for England and Wales 0·34 per 1000, but in the rate for England and Wales diarrhœa is not included.

The following table gives the number of deaths from the seven chief zymotic deseases for the past 3 years.

	1917	1918	1919
Smallpox	0	0	0
Scarlet Fever	4	13	6
Measles	26	16	24
Whooping Cough	14	31	2
Diphtheria	18	19	26
Fever (Enteric and Typhoid)	4	2	0
Diarrhœa	52	63	38

The following tables show the different death-rates per 1000 since 1887 :—

Year	Birth Rate	Quinquennial Average	Year	General Death Rate	Quinquennial Average
1887	39·00	36·77	1887	18·87	18·76
1888	37·70		1888	18·16	
1889	34·60		1889	18·50	
1890	35·80		1890	19·50	
1891	39·50	39·96	1891	19·90	19·20
1892	39·70		1892	19·10	
1893	40·40		1893	20·80	
1894	39·50		1894	20·10	
1895	40·70		1895	19·70	
1896	38·09	38·39	1896	19·00	18·51
1897	37·80		1897	16·50	
1898	38·78		1898	18·35	
1899	38·31		1899	18·44	
1900	38·96		1900	20·26	
1901	39·12	38·53	1901	19·26	18·31
1902	38·58		1902	17·29	
1903	38·36		1903	18·81	
1904	38·87		1904	18·50	
1905	37·71		1905	17·69	
1906	36·52	36·61	1906	16·59	16·13
1907	34·75		1907	16·44	
1908	37·49		1908	17·67	
1909	37·63		1909	15·01	
1910	36·65		1910	14·85	
1911	34·26	32·88	1211	16·34	14·96
1912	33·71		1912	13·91	
1913	32·54		1913	14·17	
1914	33·42		1914	14·40	
1915	30·46		1915	15·98	
1916	27·29	27·17	1916	14·45	14·50
1917	26·14		1917	12·38	
1918	28·14		1918	17·82	
1819	27·12		1919	13·35	

Year	Zymotic Death Rate per 1,000	Quinquennial Average	Year	Infantile Death Rate per 1,000 Born	Quinquennial Average
1887	...		1887	201·0	179·3
1888	...		1888	177·7	
1889	2·30		1889	166·0	
1890	3·30		1890	172·6	
1891	2·10	2·69	1891	174·9	171·7
1892	2·50		1892	146·1	
1893	3·40		1893	177·6	
1894	3·30		1894	177·0	
1895	2·27		1895	183·0	
1896	3·72	2·91	1896	182·0	179·0
1897	2·17		1897	147·5	
1898	3·41		1898	198·8	
1899	2·93		1899	169·0	
1900	2·44		1900	197·7	
1901	3·41	2·74	1901	177·3	172·1
1902	1·89		1902	137·5	
1903	2·34		1903	174·6	
1904	3·07		1904	191·6	
1905	3·01		1905	179·4	
1906	2·42	2.21	1906	163·0	154·6
1907	1·56		1907	148·3	
1908	3·53		1908	176·5	
1909	1·78		1909	140·6	
1910	1·78		1910	144·8	
1911	3·50	2·63	1911	188·6	144·7
1912	1·41		1912	120·6	
1913	2·07		1913	136·4	
1914	2·84		1914	141·2	
1915	3·33		1915	137·0	
1916	1·49	1·70	1916	125·4	116·6
1917	1·75		1917	105·3	
1918	2·14		1918	125·8	
1919	1·41		1919	110·0	

PHTHISIS PULMONALIS.

The number of cases of Pulmonary Tuberculosis notified during the year is 45 as compared with 62 cases during last year, and with 73 cases during the previous year.

Of other Tubercular Diseases there were 46 cases notified as compared with 39 cases last year and with 38 cases during the previous year.

In other words there were 91 cases of Tubercular Diseases as compared with 101 last year. This at first glance appears satisfactory but if one turns to the number of deaths, which is 77, the picture is rather gloomy, and the result of all the prodigious amount of money expended in the treatment of this fell disease, disappointment. To put it in a concrete form, during two years there have been notified 192 cases of Tubercular Disease and during the same period 167 deaths.

Assuming that the deaths occurred amongst the notified, there were only 25 persons alive at the end of the two years out of those contracting tubercle during the same time, not more than 13 per cent, whilst 87 per cent died.

This picture is a black one but it may not be quite so black as figures paint it, inasmuch as it appears that a goodly number of cases of tubercle is not notified. It is difficult to understand why medical men are so slack in notifying tubercular diseases whilst perfectly keen in notifying other infectious diseases.

Of the 71 deaths from Tubercular Diseases which have been registered during the year only 21 or 29·58 per cent. have been notified to me, leaving 50 or 70·42 per cent. not notified to me. Some of these may have been notified in other districts and if such be the case did not require to be again notified, but one can hardly believe that such a proposition is applicable to any more than a very small number. This non-notification does not apply to 1919 only but to every year since the notification of Tubercle became compulsory.

Apparently Medical Practitioners fail to realise that in failing to carry out an Order of the Ministry of Health they are liable to a penalty of £50 for each offence, and I consider the time has arrived when your Council should warn seriously medical men of the consequences of the failure to rigidly carry out the Order of the Ministry.

PREVENTION OF PHTHISIS PULMONALIS.

It is quite possible to cause Consumption and other tubercular diseases to disappear, but not by treatment only of known cases, but by prevention of infection.

In the majority of Tubercule in children and especially if the tubercular lesion be in bones or glands the type is bovine and doubtlessly conveyed to the child by the medium of raw milk, and the remedy obviously is to provide a tubercule free milk. This can be done easily. It may be costly, but the initial cost would be compensated by the saving of child health and life and the excessive cost to the County of treating cases of tubercule in children which is now being incurred.

In the adult the majority of cases of Pulmonary Tuberculosis the human type of infecting organism predominates, and the remedy here is to save infection being carried from one person to another.

Now the treatment of Tubercule is undertaken by the County Council.

DEATHS FROM RESPIRATORY DISEASES OTHER THAN PHTHISIS.

The number of such diseases, viz.: Pneumonia (129), Bronchitis (63), and other Respiratory Diseases (7) is 199 as compared with 183 last year, and with 113 the previous year which might be looked upon as a normal year.

This gives a death-rate of 2·92 per 1000 as compared with 2·72 per 1000 last year, and with a rate of 1·67 per 1000 for 1917.

The cause of such a high death-rate from Respiratory diseases is the direct result of the Influenza Epidemic prevalent in the early months of the year.

INFLUENZA.

This serious and fatal disease became epidemic in 1918, and abating towards the end of that year reappeared in the early part of 1919, with many fatal results.

Influenza itself is a short, sharp, acute illness, running a course of a few days only and disappearing, leaving the victim no doubt weak, but in practically all cases alive, but apparently it opens the door for other and more virulent organisms attracting the system which frequently cause the death of the most robust. These organisms whatever may be the most potential for evil, attack the lungs, causing some form of Pneumonia of a lethal and fatal nature.

One hopes that any future epidemic may be less virulent. In any case your Council have taken measures to assist as far as is possible the victims of any future epidemic.

UNCERTIFIED DEATHS.

The number of such deaths, by which is meant deaths not certified by a registered Medical Practitioner, or on which an inquest has not been held, is 14, as compared with 19 last year, and with 16 the previous year.

This equals a percentage of 1·5 as compared with 1·6 per cent. last year.

INFECTIOUS DISEASES NOTIFIED.

The number of cases of Infectious Diseases notified during the year has been 2,017 as compared with 933 last year.

The comparison is however not a sound one since this year has seen for the first time the notification of such diseases as Encephalitis Lethargica, Dysentery, Malaria, Pneumonia, and Influenzal Pneumonia, which collectively have added 81 notifications which cannot be compared with any previous year.

Of the cases notified, 1,075 or 53·3 per cent. are cases of Measles as compared with 454 cases last year; 572 or 28·3 per cent. are Scarlet Fever as compared with 365 cases last year; 3 or 0·14 per cent. are Enteric Fever as compared with 8 cases last year; 137 or 6·7 per cent. are Diphtheria as compared with 76 cases last year; 39 or 1·9 per cent. are cases of Erysipelas as compared with 24 cases last year; 91 or 4·5 per cent. are cases of Tuberculosis as compared with 101 last year; 16 or 0·7 per cent. are cases of Ophthalmia Neonatorum as compared with 6 cases last year; and 81 or 4 per cent. as cases of Encephalitis Lethargica (1) Dysentery (1), Malaria (21), Pneumonia (47), and Influenzal Pneumonia (10) which were not notifiable last year.

Measles have more than doubled, Scarlet fever, Diphtheria, and Ophthalmia Neonatorum have markedly increased, whilst deaths from Tubercular disease have decreased by 20 per cent.

Measles have a cycle generally of 2 years, that is to say every second year there is an epidemic, thus in 1917 there were notified 1,747 cases, in 1918 454 cases, and in 1919 1075 cases. One would expect 1920 to show a considerable decrease.

On the other hand Scarlet Fever assumes often a five year cycle. This is not regular but the table under Scarlet Fever shows a steady rise through a number of years then a sudden fall, to commence once more to rise to a maximum in 4 to 6 years. 1917 was a minimum year and it is probable that 1920 may show a further increase in tbe number of notifications.

To the oft-repeated questions (1) What is the cause of Scarlet Fever and Diphtheria? (2) Are these diseases due to bad housing. overcrowding or filth, or to a combination of all? The answer to the first question is that the cause of Scarlet Fever is a living organism, vegetable in nature, which has not yet been isolated, and that Diphtheria is due to an organism which, however, is definitely recognised as the producer of that disease.

Both these diseases have a comparatively small radius of danger, and that one person infects another at comparatively short quarters, probably a few feet.

Mild cases of Scarlet Fever and of Diphtheria are not recognised as such, the infected child (for these diseases are generally seen in childhood) mixing freely and closely with the susceptible children carries infection to a healthy person and so from person to person spread these diseases.

As to which is the most potent period for the spread of infection may be a debateable point, and the old theory that the peeling skin of the Scarlet child was the chief focus of infection must, I think, be abandoned, though the cessation of peeling generally, but by no means always marks the end of the infectious period.

Discharges from the nose, mouth, and ears, long after the peeling stage is finished are capable and often do carry infection to the healthy, and I believe that the most potent focus of infection are discharges or fine spray from the mouth and throat, and this explains why the striking distance of Scarlet Fever is limited, for if the fine scales of dead skin contained the germ the atmosphere would carry this far and wide, causing fresh infection for a considerable area around an infected house, just as the fine powder from the crusts of Smallpox is carried by the wind for a considerable distance from a focus of Smallpox, causing, as it is known to do, Smallpox for a considerable distance.

Now how far can the unfit house, the uncleaned privy or ash-closet, the overcrowding, and even the objectionable ash-pit dump or choked drain, be held responsible for the cause and spread of Scarlet Fever and Diphtheria.

No one can say that the conditions I have named in my question conduces to health, nor can anyone defend the condition of affairs just described, but there is absolutely no proof that any of these causes or even all put together produces the diseases named or even conduces to the spreading of them. Scarlet Fever and Diphtheria do not love the unfit house, the filthy ash privy, or the scavenging tip. Over 70 per cent. of the cases of Scarlet Fever and Diphtheria notified during the present year were in good houses, and over 56 per cent. were in houses built within the last 25 years. If I divide the houses in which Scarlet Fever and Diphtheria appeared during this year into New Houses, Good Houses, Poor Houses, and Unfit Houses, the following comes out.

HOUSES.	No. OF CASES.	PER CENT.
New Houses	Scarlet Fever, 324	56·6
do.	Diphtheria, 77	56·2
Good Houses	Scarlet Fever, 110	19·2
do.	Diphtheria, 23	16·7
Poor Houses	Scarlet Fever, 103	18·0
do.	Diphtheria, 31	22·7
Unfit Houses	Scarlet Fever, 35	6·2
do.	Diphtheria, 6	4·4

Leaving out the "poor house" there are at least 25 per cent. of the houses in your district unfit for human habitation, but there are only 10·6 per cent. of Scarlet Fever and Diphtheria added together which are found in the "unfit house."

Now there is no reason to say that the ashpit is better cleaned out at the good house than at the unfit, nor that the scavenging tip is nearer the unfit house than to the new house or good house.

Of a necessity an unfit house, bad scavenging, or the nearness of a filthy ashpit tip to a community does not conduce to a healthy race of children, and one would suspect that such a surrounding tends to foster disease; such a combination does foster certain diseases and make beings, especially children, more susceptable to such diseases as Diarrhœa and Tubercle, but not to Scarlet Fever and Diphtheria.

Diphtheria was not at all prevalent from 1890 to 1902, the average number of cases of Diphtheria per year being 25, but from 1903 to 1919 the average number of cases per year has been 1·04.

The attack rate per 1,000 this year excluding Measle is 13·8 as compared with 7·1 per 1,000 last year and with 4·9 per 1,000 the previous year.

The following table gives the number of notifications of infectious diseases (Measles and Tubercule excluded) and the attack rate per 1,000 since the adoption of the Infectious Diseases Notification Act in 1890:—

Year	No. of Notifications	Attack Rate per 1,000
1890	403	9·61
1891	412	8·15
1892	574	11·14
1893	842	16·15
1894	538	10·14
1895	711	12·75
1896	819	14·26
1897	378	6·63
1898	403	6·87
1899	485	8·13
1900	683	11·27
1901	822	13·51
1902	818	12·95
1903	1211	18·78
1904	789	11·85
1905	655	9·49
1906	484	6·82
1907	498	6·82
1908	685	9·14
1909	574	9·14
1910	353	5·52
1911	377	5·90
1912	349	5·29
1913	464	6·96
1914	943	14·03
1915	669	9·95
1916	851	12·44
1917	322	4·90
1918	479	7·12
1919	851	13·97

SMALLPOX.

The district was free from Smallpox during the year.

The following table shows the Vaccinated State of the Chester-le-Street Poor Law Union since 1905. There does not appear to be any increase of protected persons within the Union.

Year	Births	Vaccinated	Exempted	Percentage of Unvaccinated Children
1905	2612	1966	47	2·33
1906	2588	1964	59	2·91
1907	2534	1792	124	6·47
1908	2810	1682	523	23·71
1909	2876	1525	690	31·15
1910	2829	1525	853	35·87
1911	2685	1492	853	36·37
1912	2696	1329	970	42·19
1913	2696	1320	977	42·57
1914	2719	1195	1095	47·81
1915	2436	984	986	50·05
1916	2187	982	907	41·47
1917	2087	899	871	41·73
1918	2275	766	941	41·36
1919	2126	815	992	46·66

SCARLET FEVER.

Scarlet Fever, which during last year showed a disposition to increase in incidence, still further increased during the year, and the number of cases notified was 572, as compared with 365 last year, and with 181 during 1917. As I have already mentioned oftener than once Scarlet Fever has cycles of increase, then a fall to a minimum to again rise in frequency.

The attack rate is 8·40 per 1000 as compared with an attack rate of 5·72 per 1000 last year, and with a rate of 2·69 for the previous year.

The type has been very mild and deaths number only 6, or a case mortality rate of 1·04 per cent. as compared with a case mortality rate of 3·56 per cent. last year, and with 2·21 per cent. for the previous year.

I am often asked what is the cause of Scarlet Fever.

Scarlet Fever is due without doubt to a *living organism*, the morphology of which has not as yet been determined, though different forms have been suggested.

Scarlet Fever is a disease which is not apparently fostered by filth nor bad sanitary surroundings, for the disease, as I have in a former page pointed out, is more frequently found surrounded by luxury and cleanliness and its love for filth and discomfort is daily shown to be awanting.

The type of to-day is mild, so very mild, that people have lost their terror of the disease which 70 years ago struck dismay and horror in a community in which it appeared, carrying off its victims by the dozen. And that loss of terror is the chief reason why we have so much Scarlet Fever to-day.

The disease is mild, often not recognised, and as people disregard it as a dangerous neighbour, mix freely with the affected, visiting an infected house and receiving visits from that house from the appearance of the disease onwards.

Again, the mild unrecognised case goes to school, and the school is so keen for every scholar being there, that a dangerous item is introduced amongst a crowd of children, many of whom are susceptible. Infection is thus spread, but as there is no apparent cause in the school children the cause of the continuance of the disease in any village is looked for amongst more evident and apparent conditions which should not exist, such as the unemptied ash-pit, choked drain, or evil smelling house.

Scarlet Fever does not strike far, near contact, such as fondling, close sitting, as in school, are the causes of the spreading of Scarlet Fever. Sometimes one finds a nest of Scarlet Fever, but generally the cases are spread over a community.

The only consolation respecting Scarlet Fever to-day is that its fatal sequence has all but disappeared.

The following table gives the number of cases and the attack rate for the district since 1890:—

Year.		Number of Cases Notified.		Attack Rate per 1,000.
1890	...	284	...	5·73
1891	...	267	...	5·28
1892	...	404	...	7·81
1893	...	331	...	6·31
1894	...	304	...	5·72
1895	...	495	...	8·90
1896	...	553	...	9·75
1897	...	217	...	3·80
1898	...	273	...	4·65
1899	...	333	...	5·40
1900	...	527	...	8·69
1901	...	631	...	10·37

Year	Number of Cases Notified.	Attack Rate per 1,000.
1902	554	8·87
1903	872	13·52
1904	458	6·88
1905	383	5·55
1906	223	3·14
1907	264	3·61
1908	390	5·20
1909	379	6·20
1910	199	3·11
1911	148	2·31
1912	234	3·55
1913	300	4·50
1914	726	10·80
1915	450	6·69
1916	484	7·05
1917	181	2·69
1918	365	5·71
1919	572	8·40

MEASLES.

The number of cases of Measles markedly increased during the year reaching a total of 1,075 notifications as compared with 454 notifications last year, but fell short of the notified cases in 1917 which reached 1,425.

Measles have a fairly regular biennial cycle, one year reaching a maximum and the next year falling to their minimum.

The number of notifications do not by any means represent the number of cases which I think could easily be doubled or even trebled.

Deaths numbered 24, a case mortality of 2·2 per cent. of notified cases as compared with 3·5 per cent. of notified cases last year.

The infection of Measles appears to spread more rapidly and goes further afield than that of Scarlet Fever, and further, the power of infecting apparently resides in the nasal discharges from the earliest appearance of illness in the child but does not last long after the disappearance of the rash, probably not longer than a week or 10 days, and further, there is no evidence that clothing carries the infection of Measles.

A very common query is should children from a house in which there are cases of Measles in their acute stage attend school. Those best able to judge (and I agree with them) say that if the child attending school has already had Measles there is no reason to stop that child from school, and if clothes do not carry the infection, and if a child who has already had Measles is immune from infection, and there is no evidence to cause doubt in these two propositions, then there is absolutely no reason to deprive that child of the advantages to be derived from attending school.

ENTERIC FEVER.

This long troublesome and often fatal disease has all but disappeared from your district. During the year only 3 cases have been notified, and for the first time during the last quarter of a century and most likely for a much longer period, there has not been a single death registered from Enteric Fever.

The past 5 or 6 years have not been of such a nature, viz.: very hot with prolonged drought, as would conduce to the propogation of the Bacillus which causes Enteric Fever.

If however a sequence of dry and hot summers supervene there is evers likelihood of a recurrence of Enteric Fever, for up to now the abolition of the ash-closet and privy ash-pit has not made much headway, and without doubt these abominations by being foci for the dissemination of effete human matter act as a foster mother to the germs of Enteric Fever.

The following table gives the number of cases and the attack rate per 1,000 since 1890.

Year	Number of Notifications	Attack Rate per 1,000
1890	53	1·26
1891	71	1·40
1892	69	1·34
1893	353	6·77
1894	111	2·09
1895	72	1·30
1896	108	1·88
1897	33	0·57
1898	39	0·66
1899	57	0·95
1900	57	0·94
1901	71	1·16
1902	67	1·07
1903	32	0·49
1904	48	0·71
1905	78	1·13
1906	65	0·91
1907	23	0·31
1908	112	1·49
1909	51	0·81

Year	Number of Cases Notified	Attack Rate per 1,000.
1910 ...	28 ...	0·44
1911 ...	57 ...	0·89
1912 ...	12 ...	0·18
1913 ...	29 ...	0·43
1914 ...	33 ...	0·49
1915 ...	8 ...	0·11
1916 ...	23 ...	0·34
1917 ...	16 ...	0·23
1918 ...	8 ...	0·11
1919 ...	3 ...	0·04

DIPHTHERIA.

The number of cases notified during the year has considerably increased, being 137 as compared with 76 cases last year and with 90 cases during the previous year.

This gives an attack rate of 2·01 per 1,000 as compared with an attack rate of 1·13 per 1,000 last year, and with an attack rate of 1·34 per 1,000 for 1917.

As to the cause of and spread of Diphtheria I can only repeat my remarks already made.

In the case of Diphtheria, though not of Scarlet Fever, a definite cause can be assigned, viz:—the invasion of the individual of the Bacillus Diphtheria.

That this organism is the cause of Diphtheria has been definitely proved and it has been further established that certain individuals, though not themselves apparently suffering from any illness, habitually propagate this organism in their fauces and have the ability of spreading the disease, being centres of infection, and these carriers make the stamping out of Diphtheria all but impossible. If the actually ill child was the only source of danger then isolation of obviously ill children would soon eradicate the disease, but let a carrier, or more, get into any area, then eradicating of Diphtheria becomes a problem of the greatest difficulty, in fact, probably impossible.

Early life is the period of Diphtheria, but no one can absolutely claim immunity from the disease.

The number of deaths is 26, a case mortality of 18·97 per cent. against a case mortality of 25 per cent. last year, and of 20 per cent. during the previous year.

I have been struck during some years with the increasing number of deaths in children certified to be due to Laryngitis and Tonsilitis. This year there are 4 deaths registered as due to Laryngitis, and 3 deaths are due to Tonsilitis. This suggests to me to ask the question: "Does idiopathic Laryngitis or Tonsilitis ever cause death?"

Authorities on this prognosis of Laryngitis and Tonsilitis say that a favourable prognosis is to be looked for in all such cases unless suffocation from œdema of the larynx in cases of Laryngitis causes death, but even in such case tracheotomy will save the child from death from suffocation. These 7 deaths occurred in areas in which Diphtheria was prevalent.

The General Practitioner is offered free of charge the assistance of the Bacteriologist in assisting him to arrive at a diagnosis of a throat affection when in doubt of its cause. In none of the seven cases I have quoted does it appear that the assistance of the Bacteriologist been requisitioned. One might say that a swab cannot be taken from the larynx. True, but if one has the Bacillus in the larynx it will likely be found in the pharynx from which a swab can be got.

Deaths from Laryngitis and Tonsilitis especially if there be spasms of the glottis are suspicious that one has something more to deal with than a simple inflammation of the parts named.

Now in cases of doubt as to whether a throat affection is due to a simple catarrhal condition local in its action and in its effects, or to the dangerous Bacillus Diphtheria which is not local only in its effects but which causes a general infection of the whole system, often fatal in its results, one would consider that it is the wise man, when in doubt, to treat the case as one of the latter group, and give what is known to be an effectual cure if applied early enough. I mean antitoxic diphtheria serum. If the dread of anaphylaxis ever enters the mind of the practitioner (and my experience has been that it is not the bogey it is said to be), the injection of a few minums of serum will tell in a few minutes whether the danger of anaphylaxis is present or not.

For 137 cases of Diphtheria I have been asked for no more than 72.000 units of serum, I should say that at least 374,000 should have been required, but as 4,000 or even 6,000 units are generally used by those who employ serum then the quantity which should have been asked for would have been 748,000 units or 1,124,000 units.

I strongly consider that whether a child is to be removed to the Isolation Hospital or not, the first thing to be done is to inject serum, for after all the first function of an Isolation Hospital is isolation, and secondly, treatment after the admission of the patient, the Practitioner's duty is to treat at the earliest moment after discovery of the disease.

If the distance Practitioners have to send for serum is any bar to its early use, then I should very strongly advise your Council to arrange for storage of serum in different localities so that all Practitioners could have serum in an hour or so. Several objections may be raised to such a plan but the safety of the life of a single child must overrule all objections.

Year	Number of Notifications	Attack Rate per 1,000.
1890	6	0·11
1891	15	0·30
1892	27	0·52
1893	29	0·55
1894	15	0·28
1895	16	...
1896	57	1·00
1897	21	0·36
1898	16	0·27
1899	10	0·16
1900	17	0·28
1901	33	0·54
1902	64	1·02
1903	128	1·98
1904	130	1·95
1905	80	1·15
1906	112	1·58
1907	128	1·75
1908	104	1·38
1909	76	1·21
1910	53	0·83
1911	92	1·44
1912	39	0·59
1913	61	0·93
1914	89	1·32
1915	151	2.11
1916	169	2·51
1917	90	1·32
1918	76	1·13
1919	137	2·25

WHOOPING COUGH.

There have been only 2 deaths from Whooping Cough during the year as compared with 31 last year, and with 14 during the previous year. This is probably the lowest on record. The death-rate is 0·02 per 1,000 as compared with 0·46 per 1,000 last year, and with 0·20 per 1,000 during 1917.

DIARRHŒA.

Once again the climatic conditions were against the prevalence of Diarrhœa. Continued dry atmosphere with high temperature is a condition which favours the developement of summer Diarrhœa. It is found that Diarrhœa in not by any means prevalent until there is a mean temperature of 55 degrees at a point 5 feet below the surface.

After that mean temperature is reached the micro-organism which produces Diarrhœa finds a suitable atmosphere for its reproduction, and Diarrhœa appears and increases in virulence in direct ratio to the continuation of its favourable surroundings. Add a filthy environment to the house or filthy conditions of the house plus overcrowding, and one sees that the infecting organism in Summer Diarrhœa finds itself in the very best possible conditions to show its fatal power.

The number of deaths from Diarrhœa this year is 38 as compared with 63 last year, and with 57 during the previous year.

This gives a death-rate of 0·55 per 1,000, as compared with a death-rate of 0·93 per 1,000 last year, and with 0·62 per 1000 during 1917.

The death-rate for Diarrhœa for children under 2 years old is 9·35 per 1000.

The number of deaths from Diarrhœa in children under 1 year old is 15 or 39·47 per cent. of the total, showing that Diarrhœa is specially fatal in the very earliest years of life.

Can anything be done to lessen the mortality from Diarrhœa?

That can be answered positively. Whatever will reduce a foul atmosphere, especially if the fouling is due to or increased by human effete matter, either fœcal or exhaled, will tend to reduce the best nidus for that organism guilty of causing Diarrhœa.

This proposition suggests more space about houses, less fæcal matter near houses or deposited in heaps in your district, better ventilation in the house, and less overcrowding. Ventilate, and the evil effects of foul air from overcrowding goes, but I am afraid the idea of ventilation is hazy amongst the general population, "cosyness" being the ruling passion in the majority of cases, much to the hurt of the body, even if it be a passing comfort.

One hopes that the day of less fouled air in the house and its immediate neighbourhood as well as in its distant environment is approaching, and that Diarrhœa will lessen considerably and a saving of lives take place.

ERYSIPILAS.

The number of cases notified this year number 39, as compared with 24 last year.

Erysipelas as now seen is a simple and practically harmless affection.

OPHTHALMIA NEONATORUM.

There were 16 cases of Ophthalmia Neonatorum notified during the year as compared with 6 last year and 5 during the previous year.

This is the highest number ever notified since the adoption of notification.

There is a possibility that this disease will increase.for a few years and though not dangerous to health, that form caused by the gonnococcus is a malady dangerous in the extreme to the eyes, and very frequently results in total blindness of the infant.

ENCEPHALITIS LETHARGICA.

One case was notified during the year. The notification followed a Memo issued by the Ministry of Health. The child made an excellent recovery and there is every reason to believe that the case was not one of Encephalitis Lethargica

MALARIA.

There were 21 notifications of Malaria all in solders returned from Malarial areas.

It is not likely that Malaria will become epidemic in your district and doubtless the severity of the cases will gradually become less, and that the sufferers will be free from attacks. Besides, Tropical Clinics are now being established for the treatment of such cases with the double view of accurate diagnosis of recurrent shivering attacks as to whether such are Malarial or not, and for the successful treatment of actual Malarial recurrent attacks.

CEREBRO SPINAL MENINGITIS.

There were 4 cases notified during the year, but three of these notifications were withdrawn by the notifying practicioner as the after history of the 3 cases showed that they were not Cerebro Spinal Meningitis.

The fourth case was genuine. The child had recovered from Measles and was quite well until one evening when she suddenly complained of being ill and became more or less comatose.

The care of the child passed from the notifying practitioner. Death occured on the third day after notification, and the cause of death was certified to be (1) Measles, (2) Pneumonia. There I suppose the matter must end, but there is a wide ditch between the symptoms of Cerebro Spinal Meningitis and those of Pneumonia supervening 14 days after an attack of Measles from which the child had evidently recovered.

REMOVAL OF HOUSE REFUSE.

The non-removal of house refuse gave rise to many complaints during the year, and arose from more than one cause, but at certain parts of the year in some of the parishes the scarcity of labour was one of the reasons, and so badly was the work done that the Council undertook the Scavenging by their own men.

Mr. Wadge says—"The neglect was very bad in the Little Lumley Parish and the Council took over the work in June, since which time the work has been very well done."

"The work has also been taken over in the Parish of Washington except for 293 houses which are still Scavenged by Contract."

"The question of tips for refuse is becoming a problem. . . . . . To have tips removed outside the pale of houses and roads is going to be difficult and very expensive."

Mr. Swaddle reports—"The manner in which the Contractors carried out the removal of house refuse was very unsatisfactory from a sanitary point of view and it was only by repeated inspections entailing a waste of valuable time that the service, however irregular was maintained in some areas.

"The contract for Great Lumley had to be relet owing to continued neglect of one of the contractors."

"In Newfield and West Pelton area the contractor gave continued trouble: in Grange Villa, Plawsworth, and Sacriston areas, the work was neglected from time to time."

Mr. Brown reports—"In the northern division of Birtley parish the contractor did the work badly. It was taken over by the Council's own men, and has been like the rest of the parish, systematically done."

"Some parts of Lamesley parish well done, some fair, and some not very well done."

'Ouston parish:—Very well done on the whole."

"Urpeth parish:—Part done by the Colliery Company, well done, but sub-let portion neglected occasionally."

"The western division of this parish fairly well done mostly, but very badly done during last few weeks."

The "Tip Question," ever an acute one, is ever recurring in connection with the extra incidence of some infectious disease and is a continual source of worry and annoyance to everyone connected with your Council.

This condition of worry will continue so long as your Council have tips receiving the same material as now carted to them.

There can not be a good tip or even a permissible tip for human excreta in your district. Your district is too dense for that purpose. Tips are a nuisance, dangerous to health and offensive to some of the senses. They are a factor in producing filth diseases. They may not be the breeding place for flies, but they may be the feeding place for the house fly even though at a considerable distance from a house, and the fly, especially the female fly has been proved to be a gross feeder and a filthy one, covering its feet with excreta which it carries to the house and by its predatory habits running over everything in the house impregnates and infects food with the contents of the ashpit.

If your Council could advance so far as to abolish ash-pit privies and ash-closets then the question of tips would cease to be, for house refuse free from human excreta could be deposited anywhere, even though it contained vegetable matter, but there is no need of it to contain even that destructable material for a small fire will easily destroy a cubic foot of tightly compressed vegetable matter in a couple of hours, and the same with destructable animal matter such as bones, and there need be nothing save mineral material and thus harmless matter in the ash-pit.

So long as the ash-pit and ash-closet prevail so long will there be complaints of the noisome tip.

There may be other alternatives suggested to keep the ash-closet and ash-pit and have no tip nuisance, such as destruction by fire of the ash-closet contents, or again, removal to sea. Both are more expensive and much less sanitary than the replacing of the ash-closet, the former being practically prohibitive owing to cost and the strong objection always manifested by the people who live near a site of a proposed destructor.

Removal to sea is practicable as you have a navigable river within your district, at least it is navigable during certain parts of the day, and with swift moving motor vehicles carrying a good weight of cleanings, such a method of removal is feasible.

This idea has been mooted by some of your members before now, yet there are strong objections to it. There is the passing of the vehicles laden with filthy material, probably spilling some of it on the roads through populous districts to reach the river, but greater than this would be the retention of the unsanitary ash-pit and ash-closet.

The war having blocked practically all real sanitary improvements, the substitution of ash-pits by water-closets has made very little headway during the past five years.

Herewith I give a table of the closet accommodation as it existed in 1915, and though there may be a few alterations these could be counted on the fingures of one's hands, and for all practical purposes this table represents the state of the closet accommodation as it exists to-day.

Township.	Number of Dwelling Houses and other occupied buildings.	Closet Accommodation.				Refuse.	
		W.C.	E.C.	A.C.	Privies.	Ash-pits.	Ash-bins
Barmston	103	13	...	95	10	...	...
Biddick, South ...	28	11	...	17	4	...	...
Birtley	1801	405	2	1188	326	...	...
Burnmoor	275	38	...	99	156	...	...
Cocken	33	5	59	25	6	...	...
Edmondsley	473	25	...	309	135	...	...
Harraton	699	123	...	534	98	...	...
Lambton	31	4	...	16	11	...	...
Lamesley	1442	247	...	844	398	...	...
Lumley Great	474	41	5	318	90	...	...
Lumley Little	378	32	...	344	37	...	...
Ouston	207	21	...	178	25	...	...
Pelton	1859	423	...	1193	220	...	...
Plawsworth	290	30	...	134	121	...	...
Urpeth	806	80	...	464	292	...	...
Usworth	1546	301	...	1191	112	...	...
Waldridge	294	...	...	275	19	...	...
Washington	1620	444	...	1103	143	...	...
Witton Gilbert ...	1667	218	27	1047	430	...	...
Total	14026	2461	93	9374	2633	...	...

UNHEALTHY DWELLINGS.

This question is much in the same condition as it was in a year ago, and I need not labour the question in an endeavour to prove that your Council require somewhere around 4,000 houses to clear away the unfit house and the overcrowded house.

I do not go into a detailed analysis of the houses in each parish because the data are not readily available or probably as accurate in detail as they will be for the next year (1920) when I shall be in a position to give a detailed account of each township, but taken as a whole the following figures for your district are of interest and are taken from the report of the Sanitary Inspectors made to your Council a few weeks ago:—

Birtley Sub-district (the townships of Birtley, Lamesley, Ouston, and Urpeth) with a total of 4139 houses.

There are in this Sub-district 396 houses unfit for human habitation.

Witton Gilbert Sub-district (the township of Cocken, Edmondsley, Lumley Great, Pelton, Plawsworth, Waldridge, and Witton Gilbert), with a total of 4,901 houses there are 1,286 houses unfit for human habitation, and 301 overcrowded.

Washington Sub-district (the townships of Barmston, Biddick South, Lambton, Lumley Little, Harraton, Usworth, and Washington, with a total of 4,564 houses.

There are 1,118 houses unfit for human habitation, and 513 overcrowded.

This gives a grand total of 3,614 houses, which require to be built to meet the minimum present day needs of the district.

The provision of better houses is not without its difficulties. The overcrowding can be easily abated as soon as there are houses to shelter the families now overcrowded, but the closing of the borderland alleged unfit house has to run the gauntlet of a bench of Magistrates, an uncertain quantity, so far as their decisions go.

FACTORIES AND WORKSHOPS.

These places have been periodically inspected and found to be in satisfactory condition.

GENERAL INSPECTION OF THE DISTRICT.

I should again like to bring to your notice the consideration of the advisability of increasing the Sanitary Inspectorial Staff, for it is by inspection frequently made that good results follow, and I believe that the extra outlay would be amply repaid by the better results obtained, the quicker abatement of nuisances especially minor nuisances, and the better condition houses would be kept in by the quicker detection of the small matters which singly may be little, but collectively make a moderately good house a poor one.

TABLE I.

CHESTER-LE-STREET RURAL DISTRICT.

Vital Statistics of Whole District during 1919 and previous Years.

YEAR.	Population estimated to middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Un-corrected Number.	Nett.				of Non-residents registered in the District.	of Residents not registered in the District.	Under 1 year of age.		At all Ages.	
			Number.	Rate.	Number.	Rate.			Number.	Rate per 1,000 Nett Births.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1914	67,194	2,239	2,246	33·42	882	13·10	13	99	318	141·2	968	14·40
1915	67,194	2,043	2,047	30·46	1,005	14·94	29	98	280	137·0	1,074	15·98
1916	67,194	1,834	1,834	27·29	813	12.09	19	114	230	125·4	927	14·45
1917	67,194	1,757	1,757	26·14	755	11·25	30	107	185	105·3	832	12·38
1918	67,194	1,891	1,891	28·14	1,089	16·20	21	111	238	125·8	1,200	17·82
1919	68,020	1,845	1,845	27·12	824	12·11	14	98	203	110·0	908	13·35

Area and District in acres (exclusive of area covered by water). 32,429

Total population at all ages, 63,882
Number of inhabited houses 12,798
Average number of persons per house, 4·99
At Census of 1911.

TABLE II.

CHESTER-LE-STREET RURAL DISTRICT.

Cases of Infectious Diseases notified during the Year 1919.

Notifiable Diseases.	Cases notified in Whole District.							
		At Ages—Years.						
	At all ages.	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 & upwards.
Measles	1075	25	480	556	5	5	4	...
Smallpox	...	...	...	...	...	...	...	...
Encephalitis Lethargica	1	...	...	1	...	...	...	...
Cholera	...	...	...	...	...	...	...	...
Diphtheria (Including Membranous Croup)	137	...	31	100	5	...	1	...
Erysipelas	39	1	1	2	4	11	16	4
Scarlet Fever	572	8	114	399	38	11	2	...
Typhus Fever	...	...	...	...	...	...	...	...
Dysentery	1	...	...	...	1	...	...	...
Enteric Fever	3	...	...	3	...	...	...	...
Malaria	21	...	...	...	6	14	1	...
Relapsing Fever	...	...	...	...	...	...	...	...
Continued Fever	...	...	...	...	...	...	...	...
Puerperal Fever	3	...	...	...	1	2	...	...
Cerebro-spinal Meningitis	1	...	...	1	...	...	...	...
Pneumonia	47	...	13	8	7	12	5	2
Poliomyelitis	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis	45	...	2	12	11	12	8	...
Other forms of Tuberculosis	46	2	12	27	2	3	...	...
Glanders in man	...	...	...	...	...	...	...	...
Influenzal Pneumonia	10	...	...	2	3	2	3	...
Anthrax in man	...	...	...	...	...	...	...	...
Ophthalmia Neonatorum	16	16	...	...	...	...	...	...
Total	2017	52	653	1111	83	72	40	6

Notifiable Diseases.	Total Cases notified in each Locality.																			Public Institution.		
	Barmston.	Biddick, South.	Birtley.	Burnmoor.	Cocken.	Edmondsley.	Harraton.	Lambton.	Lamesley.	Lumley, Great	Lumley, Little	Ouston.	Pelton.	Plawsworth	Urpeth.	Usworth.	Waldridge.	Washington.	Witton Gilbert.	Dame Margaret's Home.	Earl's House Industrial School.	Sanatorium.
Measles	2	...	31	10	4	12	60	...	81	25	44	12	308	8	74	141	8	225	27	3	...	...
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (Including Membranous Croup)	2	2	12	...	...	3	21	...	3	8	2	2	38	1	17	11	1	11	3	...	...	...
Erysipelas	1	...	7	...	...	1	1	1	3	1	2	...	6	2	3	5	...	6	...	...	...	...
Scarlet Fever	6	...	21	1	...	26	16	2	42	5	5	2	40	7	7	108	...	79	195	...	...	...
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Enteric Fever	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...
Malaria	...	...	1	1	...	...	...	...	...	...	1	...	2	3	...	4	...	5	4	...	...	...
Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...
Cerebro-spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Pneumonia	...	...	5	5	...	2	6	...	...	4	4	...	5	...	1	1	4	3	7	...	...	...
Poliomyelitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis	...	...	5	1	1	2	1	...	5	7	6	1	3	2	4	...	3	...	4	...	...	...
Other forms of Tuberculosis	1	...	11	...	...	1	1	1	1	3	9	...	2	1	1	6	...	4	4	...	...	...
Glanders in man	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenzal Pneumonia	...	...	2	...	...	...	1	...	...	...	...	...	...	...	2	3	...	...	2	...	...	...
Anthrax in man	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia Neonatorum	...	...	3	...	...	...	6	...	...	...	...	...	5	...	1	...	...	...	1	...	...	...
Total	12	2	98	18	5	47	114	4	135	54	83	17	411	25	111	281	16	333	248	3	...	...

Notifiable Diseases.	Number of Cases Removed to Hospital from each Locality.																			Public Institutions.		
	Barmston.	Biddick, South	Birtley.	Burnmoor.	Cocken.	Edmondsley.	Harraton.	Lambton.	Lamesley.	Lumley, Great	Lumley, Little	Ouston.	Pelton.	Plawsworth.	Urpeth.	Usworth.	Waldridge.	Washington.	Witton Gilbert.	Dame Margaret's Home.	Earl's House Industrial School.	Sanatorium,
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (Including Membranous Croup)	2	...	5	...	...	4	14	...	...	5	1	...	29	...	14	8	...	6	1	...	...	...
Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Scarlet Fever	4	...	12	1	...	13	5	1	23	3	12	...	10	3	4	53	...	53	77	...	...	...
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Pneumonia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poliomyelitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other forms of Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Glanders in man	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenzal Pneumonia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax in man	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia Neonatorum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	6	...	17	1	...	17	19	1	23	8	13	...	40	3	19	62	...	60	78	...	...	...

CHESTER-LE-STREET RURAL DISTRICT.

Causes of, and Ages at Death during the Year 1919.

CAUSES OF DEATH.	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the District.									Deaths in Localities at all Ages.—(Townships).																			Public Institutions.		
	At all ages.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 & upwards.	Barmston.	Biddick, South.	Birtley.	Burnmoor.	Cocken.	Edmondsley.	Harraton.	Lambton.	Lamesley.	Lumley, Great	Lumley, Little	Ouston.	Pelton.	Plawsworth	Urpeth.	Usworth.	Waldridge.	Washington.	Witton Gilbert.	Dame Margaret's Home.	Earl's House Industrial School.	Sanatorium.
All Causes Certified	908	202	54	49	77	41	128	150	207	10	3	117	21	6	33	38	......	88	21	33	17	118	15	51	95	25	120	97	......	......	......
All Causes Uncertified	14	1	1	......	1	1	1	6	3	......	......	2	1	......	......	1	......	1	......	2	......	2	......	......	1	1	3	......	......	......	......
Enteric Fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Typhus	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Smallpox	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Measles	24	4	9	8	3	......	......	......	......	......	......	1	......	......	......	......	......	......	......	1	......	18	......	1	......	......	3	......	......	......	......
Scarlet Fever	6	......	......	2	4	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	1	......	......	1	......	2	1	......	......	......
Whooping Cough	2	1	1	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	......	......	1	......	......	......	......	......
Diphtheria and Croup	26	......	3	6	16	1	......	......	......	1	1	3	......	......	......	......	......	1	1	2	......	4	......	4	2	......	4	3	......	......	......
Influenza	38	2	1	2	5	3	9	10	6	......	......	6	1	......	2	1	......	2	1	1	......	......	......	......	2	......	8	14	......	......	......
Erysipelas	3	......	1	......	1	......	......	......	1	......	......	......	......	......	......	......	......	1	......	......	......	......	......	1	......	......	1	......	......	......	......
Phthisis (Pulmonary Tuberculosis)	47	......	......	......	3	9	24	9	2	1	......	4	1	......	3	......	......	9	1	3	3	3	2	1	7	1	4	4	......	......	......
Tuberculous Meningitis	10	2	2	1	3	......	2	......	......	1	......	4	......	......	......	1	......	1	......	......	......	......	......	......	......	......	1	2	......	......	......
Other Tuberculous Diseases	14	1	1	4	2	......	5	1	......	......	......	1	......	......	......	1	......	2	......	2	......	1	......	3	......	......	2	2	......	......	......
Cancer, malignant disease	58	......	......	......	......	1	6	25	26	3	1	9	......	......	2	4	......	5	1	4	......	11	1	3	5	......	5	4	......	......	......
Poliomyelitis	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Meningitis	14	3	3	3	2	......	3	......	......	......	......	2	......	......	1	1	......	......	......	......	1	1	......	1	2	1	1	3	......	......	......
Cerebro-spinal Meningitis	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Glanders	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Anthrax	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Lead Poisoning	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Rheumatic Fever	4	......	......	......	2	1	1	......	......	......	......	......	......	......	......	......	......	......	1	......	......	......	......	......	......	1	2	......	......	......	......
Organic Heart Disease	76	......	......	......	......	3	10	25	38	......	......	9	2	......	3	5	......	9	1	3	1	17	2	2	5	3	7	7	......	......	......
Bronchitis	63	26	4	1	3	1	2	9	17	......	......	10	2	1	3	......	......	6	3	2	2	7	......	2	9	......	8	8	......	......	......
Pneumonia (all forms)	129	23	16	12	15	9	22	19	13	3	......	18	2	3	3	7	......	8	4	7	1	14	2	10	13	7	15	12	......	......	......
Other Diseases of Respiratory Organs	7	......	......	1	2	......	1	3	......	......	......	1	......	......	1	......	......	1	1	......	......	......	......	1	......	......	2	......	......	......	......
Diarrhœa and Enteritis	38	15	9	3	4	1	1	2	3	......	......	5	1	......	......	2	......	4	......	......	3	2	......	1	8	......	11	1	......	......	......
Appendicitis and Typhlitis	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Alcoholism	1	......	......	......	......	......	......	1	......	......	......	......	......	......	......	......	......	1	......	......	......	......	......	......	......	......	......	......	......	......	......
Cirrhosis of Liver	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Nephritis and Bright's Disease	21	......	......	......	2	1	4	6	8	1	......	2	......	......	1	3	......	5	......	......	......	3	1	......	1	1	2	1	......	......	......
Puerperal Fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Other accidents and diseases of Pregnancy and Parturition	7	......	......	......	......	1	6	......	......	......	......	1	......	......	1	......	......	......	......	1	......	......	......	1	1	......	1	1	......	......	......
Congenital Debility and Malformation, including Premature Birth	100	100	......	......	......	......	......	......	......	......	......	17	3	......	7	7	......	4	3	3	......	10	3	3	12	4	14	10	......	......	......
Violent Deaths, excluding Suicide	35	......	2	2	6	6	9	6	4	......	......	3	6	1	......	3	......	5	1	......	......	3	1	5	3	......	3	1	......	......	......
Suicide	3	......	......	......	......	......	3	......	......	......	......	......	......	......	......	1	......	1	......	1	......	......	......	......	......	......	......	......	......	......	......
Other Defined Diseases	137	17	1	3	5	5	21	36	49	......	......	19	3	......	2	1	......	17	1	4	3	18	1	9	23	6	17	13	......	......	......
Diseases ill-defined or unknown	59	9	2	1	......	......	......	4	43	......	1	4	1	1	4	2	......	7	2	......	3	6	2	3	2	1	10	10	......	......	......
All causes	922	203	55	49	78	42	129	156	210	10	3	119	22	6	33	39	......	89	21	35	17	120	15	51	96	26	123	97	......	......	......

TABLE IV.

CHESTER-LE-STREET RURAL DISTRICT.

INFANT MORTALITY, 1919.

Nett Deaths from stated causes at various Ages under 1 Year of Age.

CAUSE OF DEATH.		Under 1 Week.	1—2 Weeks.	2—3 Weeks.	3—4 Weeks.	Total under 1 Month.	1—3 Months.	3—6 Months.	6—9 Months.	9—12 Months.	Total Deaths under One Year.
All Causes	Certified	66	11	15	8	100	29	28	22	23	202
	Uncertified								1		1
Smallpox											
Chicken-pox											
Measles									1	3	4
Scarlet Fever											
Diphtheria and Croup											
Whooping Cough									1		1
Diarrhœa							5	3	4	3	15
Enteritis											
Tuberculous Meningitis										2	2
Abdominal Tuberculosis											
Other Tuberculous Diseases										1	1
Congenital Malformations		5		1		6					6
Premature Birth		33	6	6	1	46	2	1			49
Atrophy, Debility and Marasmus		19	1	2	1	23	6	6	1	2	38
Atelectasis		6	1			7					7
Injury at Birth		2				2					2
Erysipelas											
Syphilis					1	1	1				2
Rickets										1	1
Meningitis (not Tuberculous)					1	1		1		1	3
Convulsions		1			1	2	1		3	2	8
Gastritis							1	1			2
Laryngitis											
Bronchitis			1	3		4	7	8	5	2	26
Pneumonia (all forms)				1		1	2	7	8	5	23
Suffocation, overlying											
Other Causes			2	2	3	7	4	1		1	13
		66	11	15	8	100	29	28	23	23	203

Nett Births in the year
- legitimate ... 1755
- illegitimate ... 90

Nett Deaths in the year of
- legitimate infants ... 185
- illegitimate infants... 18

TABLE V.

Birth Rate, General Death Rate, Zymotic Death Rate, Diarrhœal Death Rate, and Infantile Death Rate in each Township during 1919.

Township.	Birth Rate per 1000.	General Death Rate per 1000.	Zymotic Death Rate per 1000.	Diarrhœal Death Rate per 1000.	Infantile Death Rate per 1000 born.
Barmston	16·98	18·86	1·88	....	111·1
Biddick, South	14·81	22·22	7·40	....	....
Birtley	28·77	13·71	1·03	0·57	120·4
Burnmoor	19·69	16·66	0·75	0·75	192·3
Cocken	45·71	34·28	....	....	....
Edmondsley	29·43	14·28	0·43	....	132·3
Harraton	23·54	11·02	0·59	0·59	151·9
Lambton	13·33	....	....	....	....
Lamesley	22·52	12·46	0·70	0·56	69·1
Lumley, Great	20·52	10·02	0·47	....	116·3
Lumley, Little	19·27	18·22	2·03	....	189·1
Ouston	28·57	17 34	3·06	3·06	71·4
Pelton	33·46	13·16	2·90	0·22	80·0
Plawsworth	30·76	10·49	....	....	90·4
Urpeth	19·84	12·18	1·50	0·25	88·6
Usworth	29·95	12·51	1·30	1·04	78·2
Waldridge	19·44	18·05	0·68	....	214·3
Washington	29·34	15·90	2·58	1·43	145·3
Witton Gilbert	26·82	11·99	0·61	0·12	119·8